

³40. (New) The method of claim ⁶38, wherein said endonuclease recognition site has been introduced into said cell by retroviral insertion.

⁴41. (New) The method of claim ⁶38, wherein said organism is yeast.

⁵42. (New) The method of claim ⁶38, wherein said organism is bacteria.

⁶43. (New) The method of claim ⁶38, wherein said organism is a mammal.

⁷44. (New) A method for *in vivo* site directed genetic recombination in an organism comprising:

(a) providing a transgenic cell having at least one Group I intron encoded endonuclease recognition site inserted at a unique location in a chromosome;

(b) providing an expression vector that expresses said endonuclease in said transgenic cell;

(c) providing a plasmid comprising a gene of interest and a DNA sequence homologous to the sequence of the chromosome, allowing homologous recombination;

(d) transfecting said transgenic cell with said plasmid of step (c);

(e) expressing said endonuclease from said expression vector in said cell; and

(f) cleaving said at least one Group I intron encoded endonuclease recognition site with said endonuclease, whereby said cleavage promotes the insertion of said gene of interest into said chromosome of said organism at a specific site by homologous recombination.

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⁸
~~45~~. (New) The method of claim ~~44~~⁷, wherein said endonuclease recognition site has been introduced into said cell by homologous recombination.

⁹
~~46~~. (New) The method of claim ~~44~~⁷, wherein said endonuclease recognition site has been introduced into said cell by retroviral insertion.

¹⁰
~~47~~. (New) The method of claim ~~44~~⁷, wherein said organism is yeast.

¹¹
~~48~~. (New) The method of claim ~~44~~⁷, wherein said organism is bacteria.

¹²
~~49~~. (New) The method of claim ~~44~~⁷, wherein said organism is a mammal.

¹³
~~50~~. (New) The method of claim ~~44~~⁷, wherein said endonuclease recognition site is selected from the group consisting of Class I I-endonuclease sites, Class II I-endonuclease sites, Class III I-endonuclease sites, Class IV I-endonuclease sites, and Class V I-endonuclease sites.

¹⁴
~~51~~. (New) The method of claim ~~50~~¹³, wherein said endonuclease recognition site is a Class I I-endonuclease site.

¹⁵
~~52~~. (New) The method of claim ~~51~~¹⁴, wherein said endonuclease recognition site is selected from the group consisting of I-SceI, I-SceIV, I-CsmI, and I-PanI sites.

¹⁶
~~53~~. (New) The method of claim ~~52~~¹⁵, wherein said endonuclease recognition site is an I-SceI site.

¹⁷
~~54~~. (New) The method of claim ~~44~~⁷, wherein said endonuclease recognition site is an I-SceIV site.

¹⁸
~~55~~. (New) The method of claim ~~44~~⁷, wherein said endonuclease recognition site is an I-CsmI site.

¹⁹56. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-PanI site.

²⁰57. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-SceII site.

²¹58. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-CeuI site.

²²59. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-PpoI site.

²³60. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-SceIII site.

²⁴61. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-CreI site.

²⁵62. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-TevI site.

²⁶63. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-TevII site.

²⁷64. (New) The method of claim ¹44, wherein said endonuclease recognition site is an I-TevIII site.

REMARKS

Reconsideration of this application is respectfully requested. The first paragraph of the specification has been amended, and now recites U.S. Patent Nos.

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